

# ForMetis

## ENTERPRISE ENGINEERS



The CIAO! App

A Vision for VISI

*Enterprise  
Interoperability & Co-production  
based on  
Enterprise Engineering*

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# Summary

## VISI objectives:

- Collaboration
- Interoperability of IT systems (standard)
- Communication structure (project based)

## Proposal:

A next version of VISI from an EE perspective

Communication, Interoperability, Architecture, Ontology

The CIAO! App

Acknowledgement: The CIAO! Community

# Why an EE foundation for VISI?

## **VISI is:**

- **About B2B Communication, Interoperability,( Architecture & Ontology)**
- **Much better than nothing, current version exhibits limitations**
- **Is partially based on DEMO theory, partially blessed from heaven**
- **Captures only a part of the B2B enterprise interactions**

## **Strong points:**

- **A good degree of customer satisfaction and acceptance**
- **A number of IT companies who provide high quality software systems and services**

**Now, with EE more can be achieved in a better way**

# How to do it better? (1)

**Capture all B2BC document and message exchange**

**Example:**

- Procurement documents and procedures
- Contract and Pricing (construction of a paper document)
- Co-creation, co-construction structures (construction)
- Contract (delivery and payment parts) signing and execution  
( Repository for legally binding documents, contracts)
- Life cycle services, maintenance
- Deliveries, shipments, procedures, acceptance, refusal, disputes
- (E-)Invoicing, acceptance, refusal, disputes
- (E-)Payment

**Domain / industry independent - B2B, B2C, B2BC**

**Currently some 6 companies worldwide:**

**“Capture all B2BC documents and messages”**

# How to do it better? (2)

Capture all B2BC transactions and documents *completely* and *correctly*:

- DEMO A-world; identification & authentication (risk), assignment of competence, authorisations, responsibilities
- DEMO C-world; communication acts and facts; (dis)approval, disputes, defined by the model and accepted by actors
- DEMO P-world; clearly defined and accepted production facts, represented by documents
  
- Capture and control all communication acts, facts, any actor (incl. time/date stamp and conversation patterns)
- Capture procedure instance execution in full detail
- Capture all (electronic) documents
- Knowledge production system for collaboration - Shura

The CIAO! total knowledge and control approach: No competition

# Capabilities of the CIAO! App

The Enterprise Operating System (EOS) provides:

- Model instance driven execution
- Library of DEMO models
- Prescriptive procedural control of the operation
- Total descriptive knowledge:
  - Process mining, case analysis, risk assessment,
  - Legally binding factual truth; litigation dossiers,
  - Various new (financial) services (!)

Acceptance and commitment to DEMO models:

- Clear definition of competences and responsibilities
- Complexity reduction in any dispute

The CIAO! App is a generic, domain-independent B2BC platform

# CIAO! App business relevance

Many isolated B2BC systems in the world:  
domain specific, application specific, vendor specific, document & message oriented, closed nature. They will not make it.

CIAO! App (platform) business relevance:

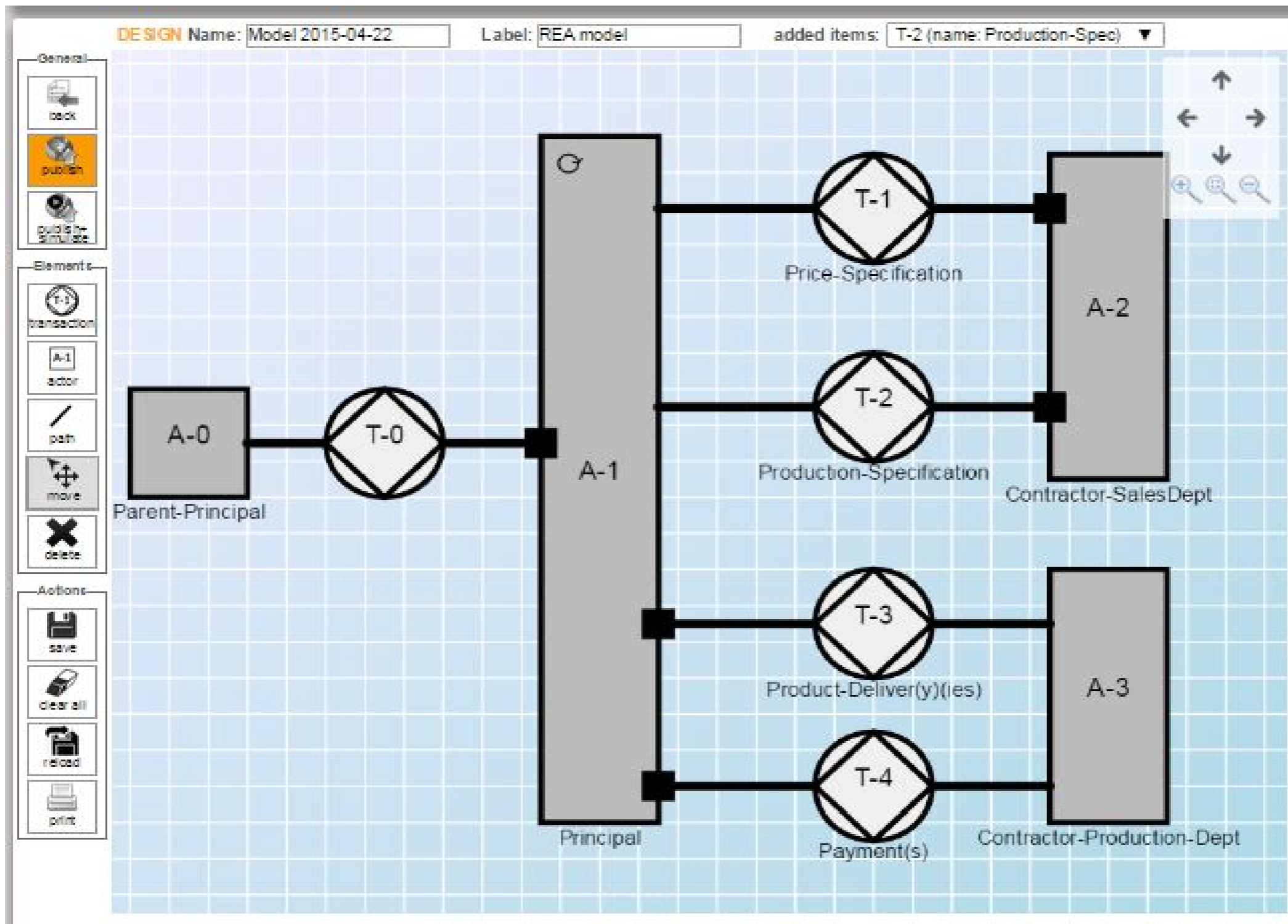
- EU: Electronic invoicing and payments may save 65 billion euro/year
- Transactional controlled E-invoicing and payments provides strong layer of protection against fraud
- Transactional controlled contract negotiation, signing, e-invoicing & payments provide complete financial reports for enterprises (REA ontology based financial IS's)
- Data analysis is a gold mine for data analyzing companies
- Many new, mostly unknown financial & business services can be provided on the CIAO! App platform

Impact on stakeholders: banks, consulting firms, data analyzers



## 2 CIAO! App Model

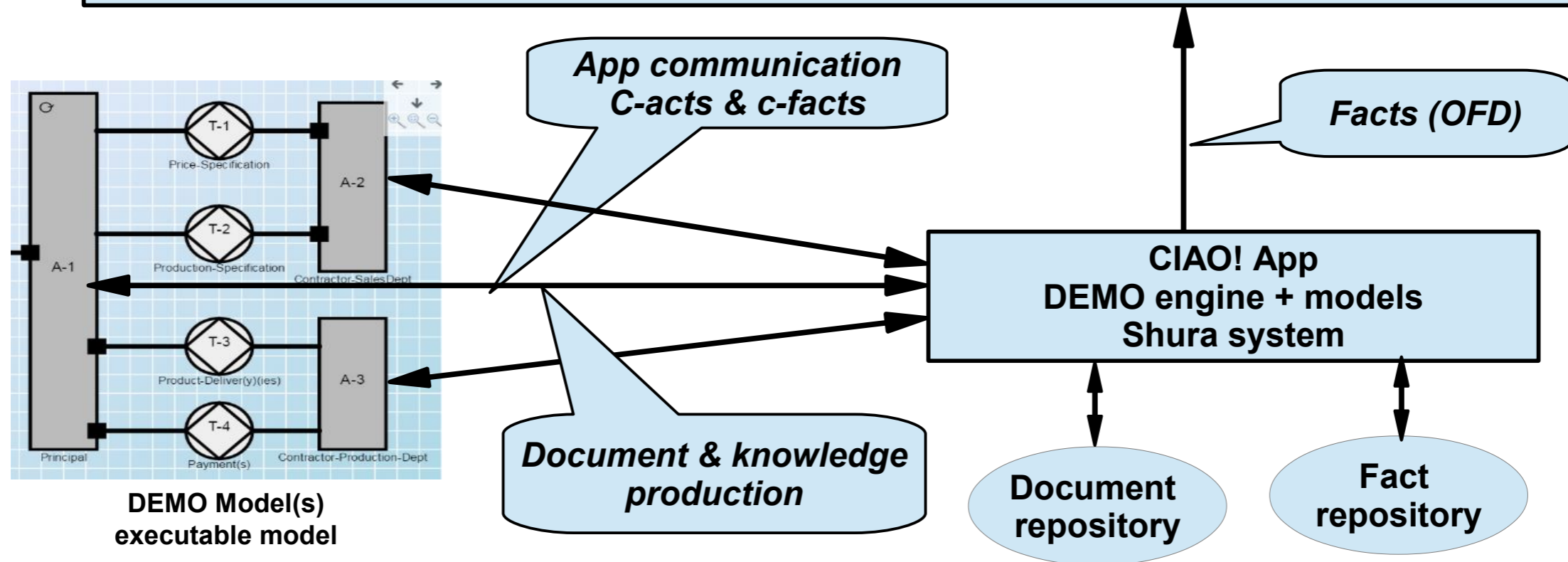




**Part of a production chain:  
2 enterprises operating in co-creation and co-production:  
Constitute a virtual enterprise.**

# The CIAO! App

Information Systems – Descriptive Perspectives in Operation  
Accounting(REA) – (new) Banking services – Consulting services – Data Analysis  
Various new services



A shared B2BC platform for co-creation and co-production  
Prescriptive model driven execution  
Captures C-acts & C-facts  
Captures and supports document & knowledge production  
Executes Fact-driven business Rules (Q3-2015)  
Reports OFD defined facts (Q3-2015)



### **3 B2BC Enterprise Interoperability Co-creation Co-production**

# B2BC Enterprise Interoperability

A production chain is composed of a tree of enterprises

- Services and products flow in one direction,
- payments flow in the opposite direction
- The economic world is a superposition of these trees

Any 2 interoperating co-creating, co-producing enterprises constitute together a *virtual enterprise* of 2 actors

The virtual co-producing enterprise encompasses much more than only delivery of some production and some payment.

The virtual co-producing enterprise must be engineered, constructed, designed, modeled and implemented.

We already know how to do that =:)

But some issues for further research on co-production remain

# B2BC Enterprise Co-production issues

Co-creation is the specification of pfacts for a co-production

- Which flowers would you like? How much do you want to spend? What about these? No..?

The pfact of the production (and the costs) is yet unknown at modeling time.

The pfact(s) must be co-created and defined at runtime.

This is not the same as Infological and Datalogical transaction results that are needed for a communication act (Joop de Jong)

Research is needed.

# B2BC Enterprise Co-production issues (2)

Explicit and implicit DEMO based (co)production is needed

Explicit DEMO model driven production: A-world, C-world, P-world

- Explicit communication acts & facts, discrete system
- Procedural enforced compliance to DEMO models
- Provides factual knowledge

Implicit DEMO theory Shura system for knowledge production

- Encompasses DEMO A-world, C-world, P-world
- Implicit communication acts, facts and productions - no models

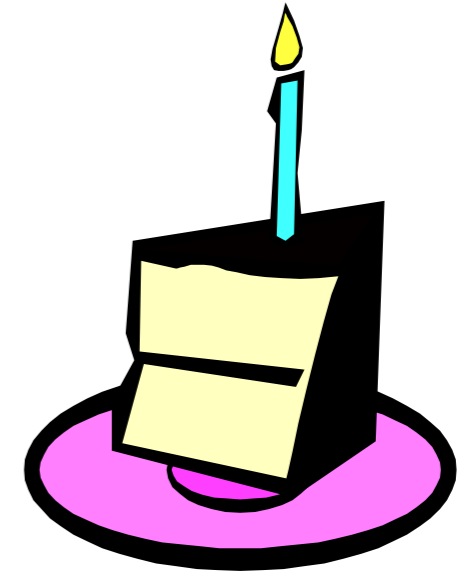
Research proposal Shura:

- Investigate Shura alignment with DEMO ( $\phi, \tau, \psi$ )
- Investigate the assignment of commitments, responsibility, competence to actors in operation

Professional world needs implicit DEMO based production systems



## Discussion & Acknowledgements



**Ciao! Community, DEMO professionals, students.**

**We shall support them with their professional work.**

